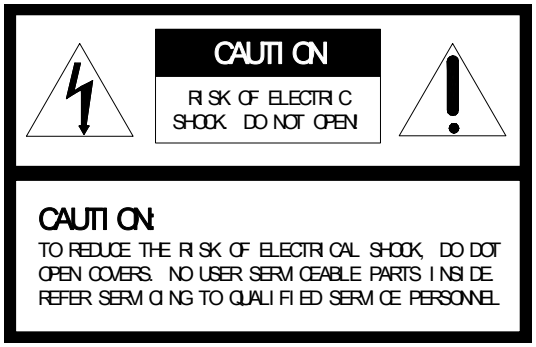
# MEDIUM DUTY
# PAN/TILT UNIT

**V1.1**

Please read the operation manual carefully

before installing and using

# SAFETY PRECAUTIONS



The lighting flash with a arrowhead symbol, in an equilateral triangle, is intended to alert the user. There is uninsulated " dangerous voltage" presence near by the product's enclosure which may be risk of to persons .

The exclamation point within an equilateral triangle is intended to alert the user to reference of the important operating and maintenance (servicing ) instructions .

THE PRODUCT CODE MARKED ON THE BOTTOM COVER. PLEASE FILL THE CODE IN THE FOLLOWING BLANK. PLEASE SAVING THIS SPECIFICATION CAREFULLY, SO THAT CHECKING

MODEL: _____

PRODUCT CODE: _____

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## I. IMPORTANT SAFEGUARDS

a) **This apparatus must be connected to Earth. This installation should be made by made by a qualified installer.**

b) **Do not carry out electrical installations in wet weather conditions.**

c) **Voltage must to be matched with P/T.**

d) **Examining connection , to sure that is correct.**

e) **Please not to put the P/T with auto scanning continuouly for long time.**

## II. Summarize

This unit is a hi-tech CCTV product which incorporates panoramic speed-variable PAN/TILT, multifunctional decoder, CPU processor, memory chip into a whole. It can largely reduce connection and installation processes of components in the system, rise up reliability of the system and facilitate installation and maintenance. Therefore it has advantages of beautiful appearance, compact structure and easy operation.

### 1、 Integrated Multi-Protocol Decoder

a. With integrated decoder and multi-protocol, it can integrate 16 kinds of communication protocols in maximum. As its baud rate of communication can be adjusted, it is compatible with many normal systems by easy setup inside the dome camera, so it has stronger versatility.

b. RS485 serial control: addresses of unit 1-511.

### 2、 Integrated Speed-Variable PAN/TILT

a. Turning 0--355°horizontally and an adjustable speed from 0.25 - 10 rad/s; turning -90 -- +20° vertically with a speed up to 10 rad/s.

b. Running stably at low speed with super lower noise. Pictures have no shaking.

### 3、 High Intelligent Degree

a. As much as 64 preset positions can be preset with powerless memory

b. The P/T can scan horizontally between two points and scan speed can be modified.

c. Six sets of programmable tour locus with 16 position each set. The running speed and the detention time are adjustable respectively;

### 4、 Could to be cooprated with outdoor housing ,also could control camera that in housing

a. Camera's iris、focus、zoon could to be manual controlled.

b. Control auto iris shutter speed.

c. Auto white balance tracking.

## III. P/T SETUP

### 1、 ADDRESS SET

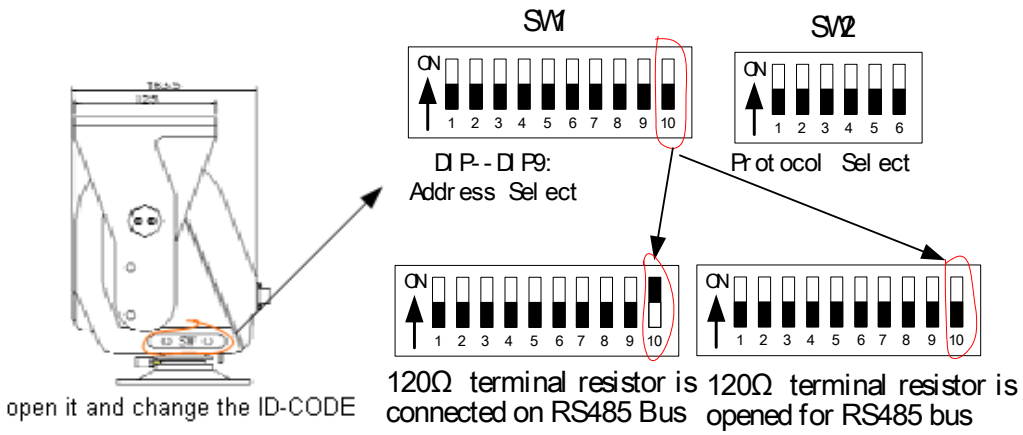


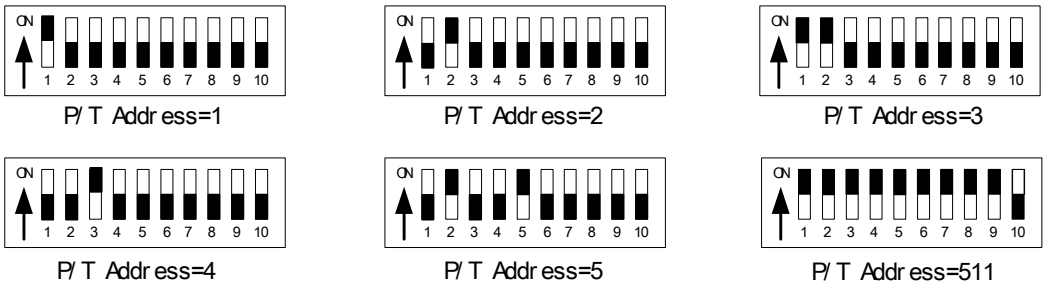

Figure 1

As shown in Figure 1, SW1 is used to set address of the P/T from 1 – 511. The ID-CODE from DIP-9 to DIP-1 are equivalent to a 9-bit binary digit. DIP-9 is MSB while DIP-1 is LSB. The state "ON" of each bit means 1 while "OFF" means 0. Following table shows states of coding switches of some addresses.

| P/T Address | Status of ID-CODE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | DIP1 | DIP2 | DIP3 | DIP4 | DIP5 | DIP6 | DIP7 | DIP8 | DIP9 |
| 1 | ON | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| 2 | OFF | ON | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| 3 | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| 4 | OFF | OFF | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| 5 | ON | OFF | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| 6 | OFF | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| 7 | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| 8 | OFF | OFF | OFF | ON | OFF | OFF | OFF | OFF | OFF |
| 9 | ON | OFF | OFF | ON | OFF | OFF | OFF | OFF | OFF |
| 10 | OFF | ON | OFF | ON | OFF | OFF | OFF | OFF | OFF |
| 11 | ON | ON | OFF | ON | OFF | OFF | OFF | OFF | OFF |
| 12 | OFF | OFF | ON | ON | OFF | OFF | OFF | OFF | OFF |
| 13 | ON | OFF | ON | ON | OFF | OFF | OFF | OFF | OFF |
| 14 | OFF | ON | ON | ON | OFF | OFF | OFF | OFF | OFF |
| 15 | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF |
| 16 | OFF | OFF | OFF | OFF | ON | OFF | OFF | OFF | OFF |
| 17 | ON | OFF | OFF | OFF | ON | OFF | OFF | OFF | OFF |
| 18 | OFF | ON | OFF | OFF | ON | OFF | OFF | OFF | OFF |
| … | … | … | … | … | … | … | … | … | … |
| 511 | ON | ON | ON | ON | ON | ON | ON | ON | ON |

Table 1

For Example:




2、 **Selection of the Terminal Resistor**

As shown in Figure 1, DIP10 of the ID-CODE is the select switch of the 120Ω terminal resistor on the bus RS485, on which only one terminal resistor of the dome camera at the farthest end can be connected, while the terminal resistors of other devices should be opened.

3、 **Setup of the Protocol and the Default Baud Rate**

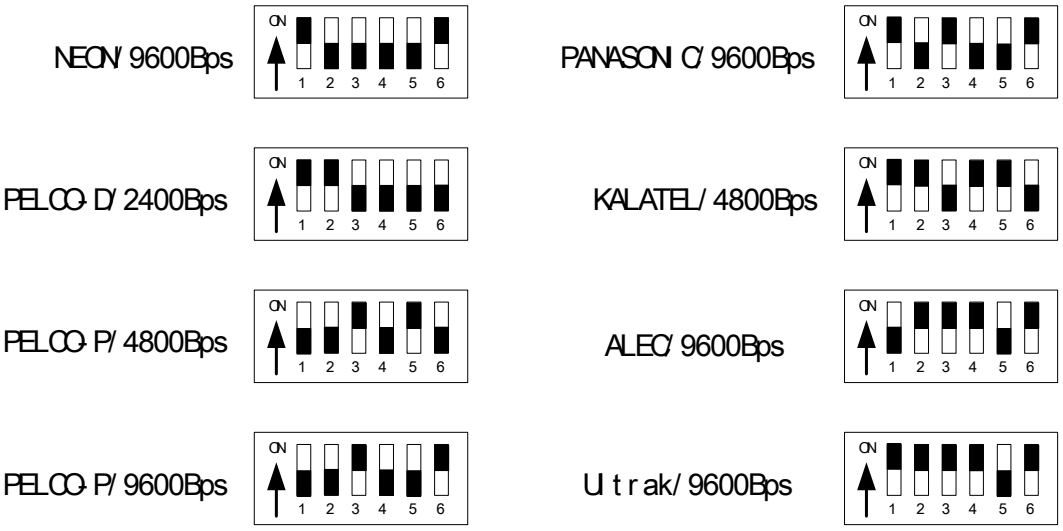
As shown in Figure 1, SW2 is used to set the protocol of communication and the baud rate used by the dome camera. DIP-4 to DIP-1 of SW2 is used to select protocols and 16 different protocols can be selected in maximum. Following table shows states of coding switches of protocols selected by the dome camera in which • means the protocol has been integrated while ○ means the protocol is temporarily vacant.

| Type of Protocols | Selection of Protocols | | | | Normal Baud Rate | | Integrated Protocol |
|---|---|---|---|---|---|---|---|
| | DIP1 | DIP2 | DIP3 | DIP4 | DIP5 | DIP6 | |
| SAMSUNG | ON | OFF | OFF | OFF | OFF | ON | • |
| NEON | ON | OFF | OFF | OFF | OFF | ON | • |
| Reserved | OFF | ON | OFF | OFF | OFF | ON | ○ |
| PELCO-D | ON | ON | OFF | OFF | OFF | OFF | • |
| PELCO-P/4800 | OFF | OFF | ON | OFF | ON | OFF | • |
| PELCO-P/9600 | | | | | OFF | ON | |
| PANASONIC | ON | OFF | ON | OFF | OFF | ON | ○ |
| Longcomity | OFF | ON | ON | OFF | OFF | ON | • |
| HUNDA600 | ON | ON | ON | OFF | OFF | ON | • |
| LILIN | OFF | OFF | OFF | ON | ON | OFF | ○ |
| VICON | ON | OFF | OFF | ON | ON | OFF | ○ |
| MOLYNX | OFF | ON | OFF | ON | OFF | ON | ○ |
| KALATEL | ON | ON | OFF | ON | ON | OFF | ○ |
| VCL | OFF | OFF | ON | ON | OFF | ON | ○ |
| DAIWA | ON | OFF | ON | ON | OFF | ON | • |
| ALEC | OFF | ON | ON | ON | OFF | ON | • |
| Ultrak | ON | ON | ON | ON | OFF | ON | • |

Table 2

Some protocols and the states of the coding switches of normal baud rate of these

protocols are shown as follows:




4、 **Setup of the Baud Rate of Communication.** As shown in Figure 1, SW2 is used to set the protocol of communication and the baud rate used by the dome camera. DIP-6 and DIP-5 of SW2 are used to select the baud rate of communication and 4 different baud rates can be selected in maximum. If the controller adopts non-standard baud rate, you can adjust it to be identical with that of the controller as per the following table.

| Baud Rate of Communication | | | | | Setup of Baud Rate | |
|---|---|---|---|---|---|---|
| | DIP-1 | DIP-2 | DIP-3 | DIP-4 | DIP-5 | DIP-6 |
| 2400bps | | | | | OFF | OFF |
| 4800bps | | | | | ON | OFF |
| 9600bps | | | | | OFF | ON |
| 19200bps | | | | | ON | ON |

Table 3

## IV. CONNECTION DETAILS

**Notice:** Before carrying out any electrical installation ensure that the cable being used in at the correct voltage and current rating for the application.

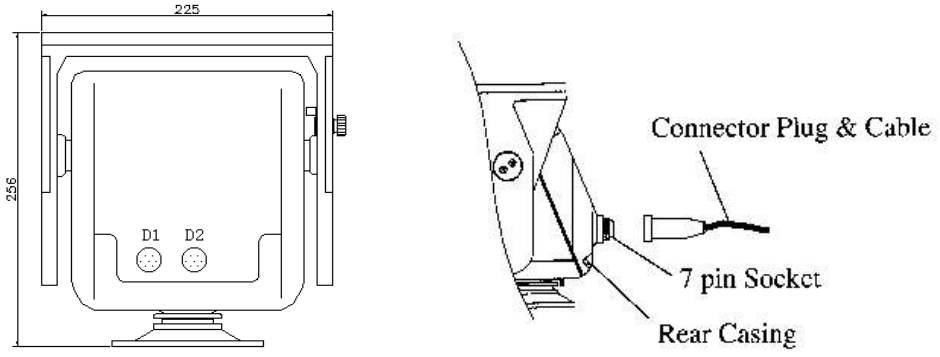


Figure 2

1. **Connection P/T with controller** ： RS485 control signal 、power supply(AC24V)、video signal could connect with controller by air waterproof connector plug (D1). Figure 4 is Connect way of D1. Figure 3 is come out line of air connector plug.

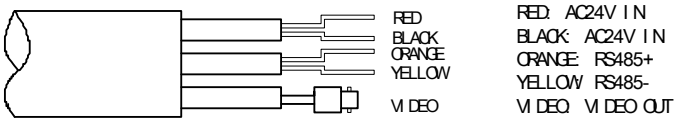



Figure 3

2. **Connection of P/T and outdoor housing：when collocate the special decoder for housing, decoder's control signal input**、Power supply(AC24V) and video signal output by air waterproof connector plug (D2) to conncet . Figure 5 is connect way of D2. Note：Connect P/T's GND with lens decoder's GND. Furthermore P/T's **TXD、RXD must cross connect with lens decoder's TXD、RXD** ,Otherwise ,lens will not to be controlled. Otherwise ,Could not to preset lens's position,only just could preset P/T's postision.

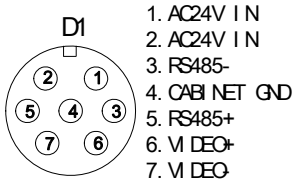



Figure 4

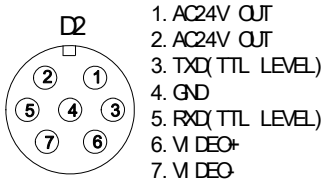


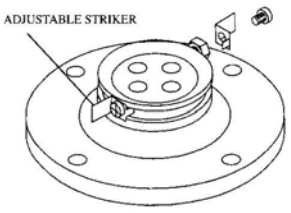

Figure 5

3. **Control wiper：Use command（D-ZOOM ON）to startup wiper**；**Use command（D-ZOOM OFF）to stop wiper. Also could use call NO.64 preset position to startup or stop(switch controll) wiper.**

## Ⅴ. SETTING PAN/TILT END

a、Setting the Pan limits (see figure 6): :Loosen the M4 screws and loosen the pan strikers. Adjust the strikers until they are at the position to strike the relevant actuator, thus activating the limit switches. Tighten the M4 screws to secure the pan strikers.

b、Setting the Tilt limits (see figure 7)：Release the screw locks and adjust the strikers until they are at the position to strike the actuator, thus activating the limit switches.



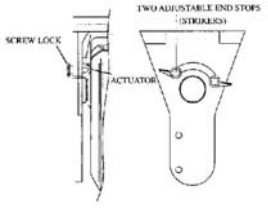



Figure 6 Figure 7

# Ⅵ. INSTALLATION

a、 This outdoor Pan/Tilt unit is intended to be mounted on a wall mount. The unit base has 4 holes equi-spaced on 4″ (101.6mm) P.C.D[see figure 8], which line up with the bracket mounting holes. Mount the unit base onto the bracket using the four M6×25 Hex head screws, 6mm washers and the M6 nuts provided in the packing kit.

b、 Remove the six M4mm fixing screws from the top platform using the three M1/4″ -20screws (supplied). Secure the Sub-plate to the base of the Camera Housing [see figure 1]. Secure the sub-plate (with camera housing attached) with the six 6mm fixing screws removed earlier.

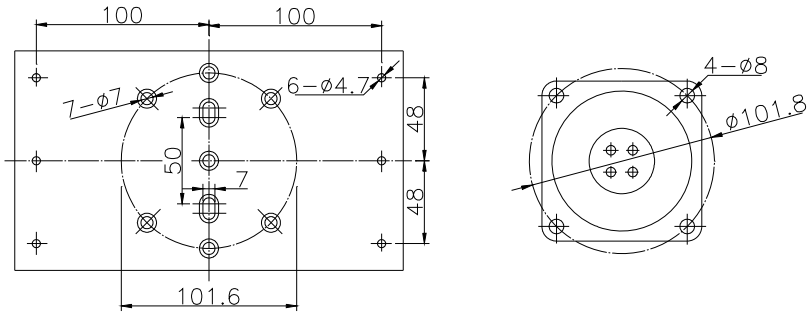



Figure 8

# Ⅶ. SPECIFICATIONS

Input Voltage: AC 24V

Angular Travel: Pan 350°

Tilt +20°~ -90° (OTT MOUNT)

Speed: Pan 0.25° ~ 10°/second

Tilt 0.25° ~ 10°/second

Limit Stop: Externally adjustable

Load Rating: 15Kgs (OTT MOUNT)

Operating Temperature: -35℃~+60℃

Construction: Aluminum alloy casting

Measurement: 225(L)×180(W)×260(H)(OTT MOUNT)

Unit Weight: 10 Kg